

REMARKS

Claims 1-17, 20, 23-33, and 35-46 are pending in the present application. While no claims are amended hereby, the Applicant has provided a listing of the claims purely for the convenience of the Examiner. Claims 1-2, 4-5, 7-8, 11-12, 14, 17, 20, 23, 26-29, 33, 37, 41-43, and 46 are rejected under 35 U.S.C. § 103(a) over U.S. Patent No. 6,871,071 to Takao et al. (“Takao”) in view of U.S. Patent No. 6,334,047 to Andersson et al. (“Andersson”). Claims 31, 38-40, and 44-45 are rejected under 35 U.S.C. § 102(e) over U.S. Patent No. 7,068,607 to Partain et al. (“Partain”). Claim 32 is rejected under 35 U.S.C. § 103(a) over Partain in view of U.S. Patent No. 6,167,240 to Carlsson et al. (“Carlsson”). Applicant traverses and respectfully requests reconsideration and withdrawal of the rejections thereto.

Applicant thanks the Examiner for indicating the allowability of claims 3, 6, 9-10, 13, 15-16, 24-25, 30, and 35-36.

Claims 1-2, 4-5, 7-8, 11-12, 14, 17, 20, 23, 26-29, 33, 37, 41-43 and 46 are rejected under § 103(a) over Takao in view of Andersson.

Independent claims 1 and 4 each recite “controlling transmission power of a common control signal, which governs a scope of service area that a radio base station forms, for interference suppression in response to said occurrence of interference between service areas provided by plural radio base stations.” Independent claim 7 recites “controllably changing transmission power of a common control signal, which governs a scope of service area that a radio base station forms to suppress interference between service areas.” Independent claims 11, 14, 37, and 41 each recite “controlling [] transmission power of a common control signal which governs a scope of service area that a radio base station forms to suppress interference [between service areas].” Neither Takao nor Andersson, alone or in combination, disclose the above-recited limitations. Accordingly, the Office Action fails to establish a *prima facie* case of obviousness. In particular, none of the cited references, even when combined, disclose controlling transmission power of a common

control signal that governs the scope of the service area that a radio base station forms to suppress interference between service areas.

The Office Action admits that Takeo does not disclose controlling transmission power of a common control signal that governs a scope of service area that a base station forms (see pages 2-3, 4, 6, 8, 10, and 23). The Office Action alleges that column 5, line 43 to column 6, line 30; column 8, line 23 to column 9, line 11; column 12, lines 25-52; and Figures 1, 3-4, and 6-7 of Andersson teach this limitation. In particular, the Office Action alleges, “[I]t is clearly stated that the power control indicator controls the transmission power of a common control signal, which governs a scope of service area that radio base stations forms for interference suppression (Fig. 1; Figs. 6-7).” Applicants respectfully disagree. As explained below, Andersson decreases the power of **a mobile station, not the transmission power of a common control signal**.

Andersson explains figures 6 and 7 at column 11, line 35 to column 12, line 22. Figures 6 and 7 are silent on the power of a common control signal and interference between service areas provided by plural radio base stations. Rather, Andersson explains that **a mobile station substantially increases its transmit power** when an obstruction such as a building blocks a line of sight radio path between a base station and a mobile station as shown in figure 6. Figure 7 adds that when the mobile stations clears the obstacle, **a mobile station’s high transmit power** causes severe interference with another base station’s transmission and with the transmissions of other mobile stations transmitting at a much lower power level. In response, **“an immediate transmit power control command is returned to the [mobile station] to decrease its power . . . [and] the transmit power of the [mobile station] is brought to a reasonable level** thereby minimizing the interference with other mobile communications [with a base station].” Col. 12, lines 12-19. Thus Andersson is silent the power of a common control signal. Instead, Andersson teaches controlling the power of **a mobile station to suppress interference with other mobile stations**. Andersson does not teach controlling transmission power of a common control signal, which governs a scope of service area that a base station forms, for interference suppression in response to said occurrence of interference between service areas provided by plural radio base stations as required by the claims.

For the reasons set out above, neither Takao nor Andersson, alone or in combination, teach each and every limitation of independent claims 1, 4, 7, 11, 14, 37, and 41. Applicant thereby respectfully submits that these independent claims are presently in condition for allowance and urge reconsideration and withdrawal of the rejections thereto. As dependent claims 2, 5, and 8-10 depend from independent claims 1, 4, 7, and nothing in Takao or Andersson cure their deficiency as applied to the independent claims, Applicant urges that these claims are in condition for allowance as well as urge reconsideration and withdrawal of the rejections thereto.

Claim 42 recites a computer readable program that “controls the operation of a radio base station” that includes the “control step of responding to occurrence of interference between plural service areas and controlling transmission power, to suppress interference autonomously.” As explained with respect to independent claims 1, 4, 7, 11, 14, 37, and 41, Takao and Andersson are silent as to controlling the operation of a radio base station by controlling transmission power to suppress interference between plural service areas provided by base stations. Rather, Andersson teaches controlling the power of a mobile station. Accordingly, Applicant respectfully submits that independent claim 42 is in condition for allowance and urges reconsideration and withdrawal of the rejection thereto.

Independent claims 17, 20, 43, and 46 each recite distributively controlling a load based on “the sum of sets of link utilization information collected from [respective] radio terminals for each radio base station.” Neither Takao nor Andersson, alone or in combination, disclose this limitation. Indeed, the Office Action admits that Takao does not disclose this limitation. See pages 12, 14, 29, and 30. Aside from this admission, the Office Action does not otherwise mention this limitation or include anything in its citation or description of Andersson that relates to this limitation, much less teaching it. Nothing in Takao or Andersson teach the sum of sets of link utilization information collected from radio terminals for each radio base station, as required by claims 17, 20, 43, and 46. Accordingly, Applicant urges that neither Takao nor Andersson teach each and every limitation of independent claim 17, 20, 43, or 46. Accordingly, Applicant respectfully submits that each of these claims are in condition for allowance and urges reconsideration and withdrawal of the rejections thereto.

Independent claims 23 and 26 each recite: “controlling transmission power of a radio base station based on said information of radio link qualities from plural radio terminals.” The Office Action admits that Takao does not disclose this limitation. The Office Action again alleges that Andersson discloses this limitation, citing to the same sections as outlined above. In particular, the Office Action alleges that Figure 4 of Andersson shows a “controlling entity that detects a signal quality parameter, such as carrier-to-interference ratio, of a signal received from a **controlled radio** A transmit power control command is sent to the radio transceiver to either raise, lower or make no change to the transceiver’s current transmit power (column 8, line 23 to column 9, line 11).” As shown by the Office Action’s own description, the transmission power is not controlled “based on said information of a radio link qualities from **plural radio terminals**,” as required by independent claims 23 and 26. Andersson’s power control commands are based on a CIR/SIR measurement from a single mobile station. Accordingly, neither Takao nor Andersson teach or suggest “controlling transmission power of a radio base station based on information of said radio link qualities from plural radio terminals,” as required by independent claims 23 and 26. As such, Applicant respectfully suggests that independent claims 23 and 26 are presently in condition for allowance and urge reconsideration and withdrawal of the rejections thereto.

Independent claim 29 recites “receiving information of radio link qualities from plural radio terminals; and controllably changing a frequency used by a radio base station based on said information of radio link qualities from plural radio terminals.” The Office Action admits at page 19 that Takao does not disclose this limitation. The Office Action alleges Andersson teaches this limitation, citing the same sections and providing the same explanation as described above (see pages 20 and 21). Yet, nothing in the Office Action’s citation or explanation of Andersson makes any reference to controlling frequency in a radio base station. Accordingly, Applicant respectfully submits that claim 29 is presently in condition for allowance and urges reconsideration and withdrawal of the rejection thereto.

Turning to claims 33, and 35-36, independent claim 33 recites a radio terminal that includes “means for measuring a radio link quality and then notifying a radio resource management apparatus of a radio link quality information being the measurement result, the notifying means

performing a notifying operation at predetermined notification intervals.” The prior Office Action admitted that Takao did not disclose this limitation. Now, the Office Action alleges that column 9, line 42 to column 10, line 55; column 11, line 65; and column 19, line 8 to column 20, line 45 of Takao teaches this limitation. Applicant respectfully disagrees. Column 9, line 42 to column 10, line 55 disclose a radio base station measuring the traffic passing through itself and carrying out handover via a number of selection methods. Column 11, line 65 is a bare reference to a radio resource management unit controlling the switch for switching the signals of each mobile station. Column 19, line 8 to column 20, line 45 are examples of a management table used to carry out handover. In this last citation, the only predetermined notification interval mentioned in Takao is where the **mobile stations are notified** about available radio resources in a base station. Far from notifying a radio resource management apparatus, as required by the claims, **the mobile stations receive a notification**; they do not perform a notifying operation. Hence, Takao nowhere discloses a radio terminal comprising “means for measuring a radio link quality and then notifying a radio resource management apparatus of radio link quality information being the measurement result, the notifying means performing a notifying operation at predetermined notification intervals” as claimed. Accordingly, Applicant urges that independent claim 33 is presently in condition for allowance and urges reconsideration and withdrawal of the rejection thereto. As claims 35 and 36 depend from claim 33, and as nothing in Takao or Andersson cure the deficiency of Takao as applied to the independent claims, Applicant urges that claims 33, and 35-36 are presently in condition for allowance and urge reconsideration and withdrawal of the rejections thereto.

The Office Action rejects claims 31, 38-40, and 44-45 under 35 U.S.C. § 102(e) over Partain. The Office Action further rejects claim 32 under 35 U.S.C. § 103(a) over Partain in view of Carlsson. The rejections are the same as those in the Office Action dated April 18, 2007. The Office Action did not respond to Applicant’s Response dated July 18, 2007, which fully addressed these rejections. Accordingly, Applicant hereby incorporates by reference the entirety of these arguments herein. Nonetheless, for the convenience of the Examiner, Applicant repeats these arguments below.

The Office Action rejects claims 31, 38-40, and 44-45 under 35 U.S.C. §102(e) as being anticipated by Partain. Each of the claims are independent. The claims recite “controllably changing a frequency used by a radio base station,” (claims 31, 40, 45) or “controlling transmission power of a base station,” (claim 39, 44); each claim recites control “based on information on radio link qualities notified from plural radio terminals.” Partain does not disclose all of these limitations.

First, as regards claims 31, 39-40, and 44-45, the Office Action admits that Partain’s bandwidth broker uses the information it collects from load measurement proxies to process on-demand admission requests. See Partain, Abstract and col. 3, lines 45-65, cited by the Office Action. Partain’s disclosure is silent on “controllably changing a frequency” or “controlling the power” of a base station, as required by these claims.

Moreover, claims 31, 38-40, and 44-45 each recite that control is “based on information on radio link qualities notified from plural radio terminals.” As explained at col. 6, lines 1-33 of Partain, also cited by the Office Action, Partain’s bandwidth broker client asks a bandwidth broker server whether a particular path is congested. The bandwidth broker server in turn collects responsive information from load measurement proxies located at various points in the network. As is clear in figure 3 of Partain, the load measurement proxies are either at the base station (RBS) or at a gateway (GM), not at the radio terminals. See also col. 7, lines 59-66 of Partain. Thus it is clear that any information used by Partain’s bandwidth broker is notified from either the base station or a gateway, and is not therefore “based on information on radio link qualities **notified from plural radio terminals**,” as required by independent claims 31, 38-40, and 44-45. Indeed, the Office Action admits as much at, *inter alia*, page 36 when it states that Partain “shows in figure 3, a bandwidth broker server that collects information from various **load measurement proxies** located at various points in the network.”

As Partain does not disclose, *inter alia*, controllably changing a frequency used by a radio base station or controlling transmission power of a base station, “based on information on radio link qualities notified from plural radio terminals,” as required by claims 31, 38-40, and 44-45,

Applicant urges these claims are in condition for allowance and requests reconsideration and withdrawal of the rejections thereto.

The Office Action rejects claim 32 under 35 U.S.C. §103(a) as being unpatentable over Partain in view of Carlsson. Claim 32 depends from independent claim 31. Partain does not disclose each and every limitation of independent claim 31, as explained above. Carlsson does not cure the deficiency of the Partain reference as applied to independent claim 31. Accordingly, Applicant respectfully submits that claim 32 is in condition for allowance and urges reconsideration and withdrawal of the rejection thereto.

In view of the above amendment, Applicant believes the pending application is in condition for allowance.

No fee is believed to be due for this Amendment. Should any fees be required, please charge such fees to Deposit Account No. 50-2215.

Dated: January 2, 2008

Respectfully submitted,

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